National Aeronautics and Space Administration

NASA SpacePlace

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News and Notes for formal and informal educators

The Space Place is a NASA website for elementary school-aged kids, their teachers, and their parents.

It's colorful! It's dynamic! It's fun!

It's rich with science, technology, engineering, and math content!

It's informal. It's meaty. It's easy to read and understand. It's also in Spanish. And it's free!

It has 130 (and counting) separate modules for kids, including hands-on projects, interactive games, animated cartoons, and amazing facts about space and Earth science and technology.

In this issue, we celebrate multiwavelength astronomy. Although we learn a lot using optical telescopes that see the same wavelengths of light our eyes see, visible light reveals only a tiny fraction of the secrets of the cosmos. To find out what else is going on, we need special instruments that can detect gamma rays, x-rays, ultraviolet light, infrared light, and radio waves.

What's New on spaceplace.nasa.gov…

No human can see infrared light. But the question is, can you recall in infrared? Exercise your own and your students' memories with the Spitzer Infrared Concentration game at The Space Place, spaceplace.nasa.gov/en/kids/spitzer/concentration.

Click on pairs of tiles in a grid to find matching images of the infrared cosmos. The Spitzer Space Telescope has been observing the infrared universe for over five years. It has captured breathtaking, never-before-imagined images of galaxies, planetary nebulae, and great clouds of dust and gas that are nurseries for newborn stars. It has lead to profound discoveries about our universe.

Start with a 3x3 grid and work your way up to 9x6—if you can! All the images have short captions so your students can better appreciate what they are seeing.

Space Place en Español

To help students understand the nature of infrared light, the Infrared Photo Album is a great start, because it shows everyday things, people, and animals in infrared. Available in English and in Spanish (at spaceplace.nasa.gov/sp/kids/sirtf1/sirtf_action.shtml), the interactive photo album has "magic" tools, such as a "lens" that you can pass over a visible light image to see it in infrared—or vice versa. See where someone has just walked barefoot across a cool floor and left their infrared (but invisible) footprints. See whether a cup contains warm or cool coffee without touching it. See an ostrich hiding in a dark building at the zoo.

Spotlight on All Kinds of Light

The Space Place has many activities and amazing fact pages that explain and demonstrate how astronomers study the universe in all different wavelengths of light. For example . . .

Cosmic Colors (spaceplace.nasa.gov/en/kids/cosmic), an interactive viewer that shows an object, such as the Moon or Saturn, as seen through a number of different kinds of telescopes. Each view shows which telescope made that picture.

The Land of the Magic Windows at spaceplace.nasa.gov/en/kids/chandra.shtml is a good place to wander and take some peeks through the radio wave window, the infrared window, the x-ray window and all the

rest. Get a beginner's introduction to the electromagnetic spectrum.

To focus for a while on ultraviolet light, go to spaceplace.nasa.gov/en/kids/galex/mira and find out how astronomers made a shocking discovery about a star they had been observing for over 400 years!

In the Space Place Live cartoon talk show episode with guest Chris Martin of GALEX (spaceplace.nasa.gov/en/kids/live/#martin), Kate and Carlos learn how observing the universe in ultraviolet light helps scientists understand how stars and galaxies form and evolve throughout their lifetimes.

For the classroom

Ob la di, ob la da
Light waves on, la
La la how the light waves on . . .

"Singin' the Black and Blues" is a multi-disciplinary classroom activity article that explains why the sky is blue during the day, and why it is black at night. The answers to both of these questions are not obvious! Scientists struggled for a long time to come up with the currently accepted explanations. This activity combines music (if desired), physics, and language arts. Check it out at spaceplace.nasa.gov/en/educators/teachers_page2.shtml#bluesky.

After-school Activity

From coffee filters and water-color pens, kids can make a montage of colorful spiral galaxies. They can add planets, moons, comets, or whatever they imagine goes into a galaxy. A nice addition to the home refrigerator art gallery. All directions are at spaceplace.nasa.gov/en/kids/galex/art.shtml.

Dates to Celebrate

Here are a few dates to remember. For lots of others, print out our Space Place Calendar page for the month at spaceplace.nasa.gov/en/kids/calendar.shtml.

September is Classical Music Month.

Music lovers know about Stradivarius violins. Did you know the Sun may have had a lot to do with why they are such exquisite sounding instruments? Check it out at spaceplace.nasa.gov/en/kids/ulysses.

Sept. 11: Make Your Bed Day

What would your bed look like in infrared light after you had just gotten up? Get a clue at spaceplace.nasa.gov/en/kids/sirtf1/sirtf_action.shtml.

Sept. 22: The ice cream cone was invented 1903.

What objects in space are most like ice cream? Comets maybe? Find out what a comet is made of at spaceplace.nasa.gov/en/kids/deepimpact.

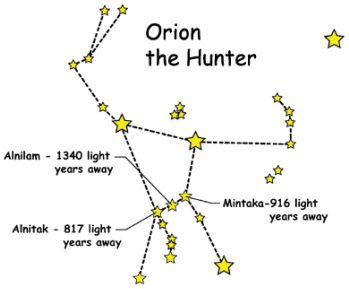
Oct. 4-10: World Space Week . . .

as designated by the United Nations General Assembly. Read some of Dr. Marc's good answers to good question about space at spaceplace.nasa.gov/en/kids/phonedrmarc.

Oct. 13: Train Your Brain Day.

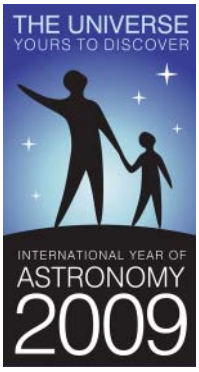
Solve an infrared "Slyder" puzzle at spaceplace.nasa.gov/en/kids/spitzer/slyder. If it's too easy for your big brain, try a harder level.

Oct. 21-22: Orionids Meteor Shower.



Good viewing this year because of waxing crescent Moon. Look to the east after midnight. Look at our beautiful and informative Orion Nebula poster at spaceplace.nasa.gov/en/educators/posters to learn about this beautiful star-forming region hiding in Orion's Belt.

Don't forget . . .



Only a few months are left in this 2009 International Year of Astronomy. Of course, our love of astronomy will go on long after this special year is past. But let us know if you are planning any special 2009 IYA-related activities. The Space Place website can be a valuable resource, and we may also be able to supply you with Space Place bookmarks, stickers, and other materials. E-mail your request to spaceplace@jpl.nasa.gov.